INA synchronizers in manual and automated manual transmissions allow for smooth, fast gear shifts. INA’s new Friction Pad System (FPS) uses friction pad inserts instead of a layer of friction material bonded to the synchronizer ring. With friction pad inserts, completely new friction materials can be used, and the friction material can be replaced without scrapping the whole ring.

With FPS, we can choose the best friction material for an application without compromising friction characteristics during the bonding process.

**Schaeffler design offers several advantage:**
- Shift feel can be tailored to an application by choosing friction materials with different properties
- Durability and shift feel can be optimized by using different friction materials in the same ring
- Synchronizer rings can be replaced quickly without other system changes
- Prototype rings are faster available than bonded rings
Looking for Custom Solutions for Production Parts? Use our Engineering Expertise!

We start early in system development and work as engineering partners with our customers. We offer state-of-the-art synchronizer technology at competitive prices and are recognized as automotive specialists.

The Friction Pad System (FPS) makes high performance synchronizers economical to produce. Shift feel is adjusted easily and quickly by using pads with different friction characteristics. The cost-effective, modular concept of interchangeable friction pads can dramatically shorten synchronizer development time.

Our proprietary BEARINX® software enables engineers to model systems with elastic bearing and shaft components. BEARINX® now includes a module for modeling and designing transmission synchronizers. Synchronizer design can be optimized by running a BEARINX® parameter analysis that iteratively calculates synchronizer response over a range of friction material characteristics.

Weak spots in synchronizer performance can be found and quickly eliminated using BEARINX® dynamic simulations. Modeling the entire transmission system including synchronizers, shaft inertia and gear forces enables us to develop efficient, reliable transmissions with our customers.

We test synchronizer components in-house, starting with component testing and ranging to complete transmission testing on the dynamometer and in vehicles. Testing under normal and extreme conditions allows us to offer the most rugged and reliable products in the automotive market.